Workshop Proceedings:
NOAA Center for Coastal Ecosystem Health
Coastal Management Services Scoping Workshop

Held in Charleston, South Carolina
December 12 - 14, 1994

Elizabeth Reynolds and Marc Hershman

School of Marine Affairs • University of Washington

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Preface

This document is a report to the National Oceanic and Atmospheric Administration's Center for Coastal Ecosystem Health (CCEH) on a Scoping Workshop held for the CCEH concerning the Coastal Management Services (CMS) portion of the Center. These proceedings include, a Summary Report of the workshop, a discussion of the workshop activities, conclusions, and a series of appendices showing the details of the workshop and the preparation for it.

These proceedings have several goals. The first is to provide CCEH leadership with expert advice from coastal management practitioners chosen from all over the nation. This advice is related to how CCEH/CMS can best serve the field of coastal management and what topics these experts felt are important. The second goal is to provide information to coastal management practitioners. The third is to provide a summary record of the ideas presented, discussed and recommended.

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Section I. Background

CCEH

NOAA established the Center for Coastal Ecosystem Heath (CCEH) in Charleston S.C. at the Charleston Naval Station in 1994. Currently, the center is involved in establishing its base capabilities, building its home at the naval station, hiring staff, and holding workshops to assess its development and obtain advice from the user communities it will be working with.

Once fully operational, this Center hopes to bridge the gap between science and management by utilizing state-of-the-art monitoring, data management, and analysis technology to support the development of management-oriented products and services. CCEH is composed of three functional areas, which in turn are made up of a total of eight components. These components will work together on the various projects CCEH undertakes.

The goal of the Coastal Management Services (CMS) functional area is to serve the national coastal zone management community by providing syntheses of scientific and management related information on relevant ecosystem health and related coastal management issues, disseminating results through a variety of information products, expert advice, workshops and other outreach efforts, and providing professional training. CMS is also expected to help define user needs and the requirements of the Center. The CMS functional area has two components Synthesis and Applications (SA), and Training, Outreach and Education (TOE).

The other functional areas include Data and Information Systems (DIS) made up of: Data Clearinghouse and Library; Integration and Development; Analysis and Characterization, and Environmental Monitoring and Technology (EMT) made up of: Environmental Monitoring and Prediction; Coastal Environmental Technology Commercialization; and Remote Sensing. The goal of DIS is to develop and provide access to relevant coastal watershed and marine ecosystem data and derived information products needed to address priority management issues in the coastal zone. DIS will also perform syntheses of policy, regulation, and management information such as cataloguing the Coastal Zone Information Center located in the NOAA

Office of Coastal Resource Management. The goal of EMT is to contribute to regional and national coastal ecosystem health preservation efforts through developing and disseminating improvements to techniques, strategies, protocols, and standards for measuring parameters of ecosystem health and human effects on ecosystem health. EMT will also contribute to human aspects of ecosystem health by working to create economic opportunities.

Scoping Workshop

This workshop focused primarily on providing recommendations for the CMS functional area, but also provided recommendations that involve the other functional areas and their components as well. Marc Hershman, Director of the University of Washington School of Marine Affairs and Paul Scholz, Leader of the CCEH/CMS Program Coordination Staff served as co-chairs of the workshop. A twelve member Steering Committee was established in mid 1994 to help create the workshop agenda and help decide who would be invited to participate. Elizabeth Reynolds, a University of Washington School of Marine Affairs graduate student was hired as Workshop Coordinator.

Workshop Participants

By way of a brainstorming process with the Steering Committee, participants were chosen to provide both regional and subject matter representation. Of the 37 participants (including the co-chairs and workshop coordinator) there were 2 NGO representatives, 1 private sector representative, 12 academics, 6 Sea Grant representatives, 1 National Marine Sanctuary representative, 3 National Estuarine Research Reserve representatives, 5 state/local level coastal managers, 1 national coastal manager, 3 CCEH representatives, 1 National Marine Fisheries Service representative, 1 State Representative, and 1 graduate student. The 15 coastal/Great Lakes states represented include California, Delaware, Florida, Georgia, Hawaii, Louisiana, Maryland, Michigan, North Carolina, New York, Ohio, Oregon, Rhode Island, South Carolina, Washington D.C., and Washington State. (See Appendix D for participant list and descriptions.)

Section II. Summary Report

**NOAA Center for Coastal Ecosystem Health Coastal Management Services Scoping
Workshop: Recommendations and Principles for Success
A Summary Report to NOAA Leadership
Submitted February 1995**

Introduction

In mid-December, a scoping workshop for the Coastal Management Services portion of

the National Oceanic and Atmospheric Administration's (NOAA) new Center for Coastal

Ecosystem Health (CCEH) was held in Charleston, South Carolina. This workshop brought

together 37 coastal management experts, practitioners and academics in an effort to provide

NOAA leadership with a clear set of recommendations on how NOAA could provide an

effective Coastal Management Service (CMS). After two and a half days of work, the group

produced two reports outlining a series of recommendations ranging from general to specific.

This summary report is a condensation of these two reports. Throughout the workshop,

participants were committed to creating workshop results that would be useful to NOAA

leadership in shaping the Center's activities and operations. From this work, the group produced

two statements: Principles for CCEH Success, and General Recommendations. The Principles

for CCEH Success are eight elements the participants felt were essential to creating an effective

Center. The General Recommendations were developed after discussions of the Center's

external communities and users, kinds of services CMS should provide, capabilities that CCEH

could uniquely provide, concepts and principles related to the organization of the center, and

operational considerations. The Principles of CCEH Success and the General Recommendations

were developed after discussion and debate. These Principles and Recommendations represent

the experience and actual needs of many of those who hope to use CCEH services in the future.

General Comments

During the workshop participants kept coming back to a dominant theme — the overriding principle guiding all aspects of the Center should be close collaboration with the user community doing coastal management in the field. This collaboration was called for in all functions of the Center including goal-setting, types of services, staffing, etc. Some type of ongoing user advisory process was called for as an initial step.

An additional theme frequently articulated was the need for the Center to find it's "niche"; to not duplicate existing services in other federal, state or non-governmental activity. For example, some participants suggested there should be a set of topics that CCEH is known to be *the* expert on. Unfortunately, the workshop was not able to come to consensus on initial themes or topics that the Center should emphasize. Perhaps this is understandable given the diverse disciplinary and program affiliations of the participants and the unwillingness to push one's own topic at the expense of another. There was a discussion at the outset about topics for emphasis and many good ideas were put forth in "outcome" and "process" categories. For example, the emergence of new organizational forums for "ecosystem" management, different from traditional regulatory and planning techniques, was mentioned as an emerging topic that might be an area of emphasis.

One of the more important outcomes of the meeting was the exposure of more than thirty experts in the nation's coastal zone management efforts to the Charleston Center and its mission regarding Coastal Management Services. These experts had good ideas and left feeling that much positive good could come from the Center. Many expressed interest in continuing to be involved in the Center's evolution. An excellent strategic move would be to build on this group to establish a network of resource persons for ongoing consultation.

Principles for CCEH Success

• CCEH should not repeat the model of many federal labs with internally driven research programs. In order to succeed, CCEH should be a collaborative, interdisciplinary center that is user-driven and user-friendly. This must be an interactive, iterative process.

> • NOAA and CCEH must take immediate steps to establish a multi-faceted advisory committee structure for continuing involvement in the evolution of the center.

> • To ensure that user needs and issues are adequately addressed, the work of CCEH must be designed and implemented with a national network of partners in a decentralized approach.

> • The CCEH staffing plan must include non-NOAA people from varying disciplines and geographic areas who would perform center functions.

• CCEH must build a constituency at the state and local level that uses the capabilities of the center.

• Quality Control, including external peer review, should be exercised for all proposals, projects, products, services, and internal center operations.

• CCEH should demonstrate leadership in cutting edge information access and distribution technology.

• The CMS component must set the agenda and function as the "gateway" to the other CCEH components. CMS should function as the point of contact for users.

Group Recommendations

During the second day of the workshop, the participants were divided into two groups and each came up with a report. Discussion in each group generally focused on the following areas:

- External communities and users
- Kinds of services
- Capabilities that CCEH should uniquely provide
- Organizational concepts and principles
- Operational considerations

In general, the two groups came up with similar findings. The following report is a condensation of the results from the two groups. Where the two groups were found to differ significantly on a particular topic, both results are presented.

- **External communities and users**

The CCEH user community was perceived to include the following types of coastal management practitioners (as discussed by group B, not discussed by group A).

- protected area managers
- municipal planners
- coastal ecosystem health researchers
- local government
- state natural resource policy makers
- state/federal/private educators
- state CZM networks
- hazardous materials spill response community
- private sector developers (commercial,
- forestry/agricultural, ports, tourism, etc.)

- government permit analysts (regulatory community)
- non-governmental organizations (advocates)
- legislators
- students (K-adult)
- environmental enforcement community
- international CZM
- consulting community
- fisheries (habitat) managers

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- **Kinds of services**

Generic categories of recommended services that CCEH should provide include the following. All of the following services are considered important and are not presented in priority order.

1. Provide a referral service - through verbal contact with callers and by providing directories.

2. Serve as a clearinghouse - by providing passthrough and internally generated information and data products.

3. Provide training - including field-based and interdisciplinary.

4. Sponsor workshops and conferences - facilitation; cross-disciplinary; topic-driven.

5. Provide outreach - to serve as a feedback mechanism; provide a linkage to real people; and provide technology transfer and technical assistance.

6. Serve as an on-site incubator - project teams, issue resolution teams, all including CCEH staff. Topic- and products-oriented.

- **Capabilities that CCEH should uniquely provide**

In order to avoid duplicating services that already exist, the group produced a detailed list of needed services that CMS could uniquely provide through its Synthesis and Application (SA), or Training, Outreach and Education (TOE) functions. All of the following services are considered important and are not presented in priority order.

1. Sponsor topic-specific, interdisciplinary workshops: user-driven, work groups; information product that documents problem resolution, i.e., results-oriented process. (SA)

2. Provide e-mail access/online services: easy access, access and training for local level users, use for product development and application, broad categories, responds to state requests. For example, professional networks, bulletin boards. (TOE)

3. Serve as a clearinghouse of internally produced (legal, political, economic, technical, management, etc.) information products. For example, publish annotated directory of networks such as UR CoastNet and Coast GIS., establish coastal film, video, CD ROM directory. (TOE, SA)

4. Provide visioning and futuring towards a scenario of sustainable coastal community health; ongoing process, updated continually. For example, develop a "State of the Coasts" report as a center led decentralized process with the states, using standard methodologies for data gathering, providing five-year scenarios. (SA)

5. Attempt an integrated approach to enhance capabilities to monitor status, project trends and predict impacts. (SA)

6. Provide public relations/media interactions including outreach functions to provide national perspective on status of CCEH. (TOE)

7. Serve as a training center for professionals, field-oriented, take advantage of existing resources. For example, HAZMAT response, NRDA, estuarine processes, resource mapping. (TOE)

8. Expand ESI layering of GIS mapping to include CZM, human uses, user needs, towards validation by users to ensure that GIS is user-friendly. (SA)

9. Provide a mechanism for promoting user-driven federally funded research and monitoring i.e., integrate users into design of federally funded research and monitoring projects. (SA, TOE)

10. Provide professional development opportunities for students (graduate and undergraduate credit), professionals, on- and off-site. Identify sources for curriculum and use existing resources within Sea Grant NERRS, NMS and continuing education programs. (TOE)

11. Secure, disaggregate, and "translate" (for management applications) geographic and natural resources data in response to user requests. (SA)

12. Ensure access and provide services/information products for state/local decision makers. For example, case studies and demonstration products; interpretation of scientific data for decision-making on a regional basis; traveling training workshops for practitioners. (SA, TOE)

• **Organizational concepts and principles**

Figure 1 depicts an organizational arrangement suggested by Group A:

Figure 1: Coastal Management Services Functional Arrangement
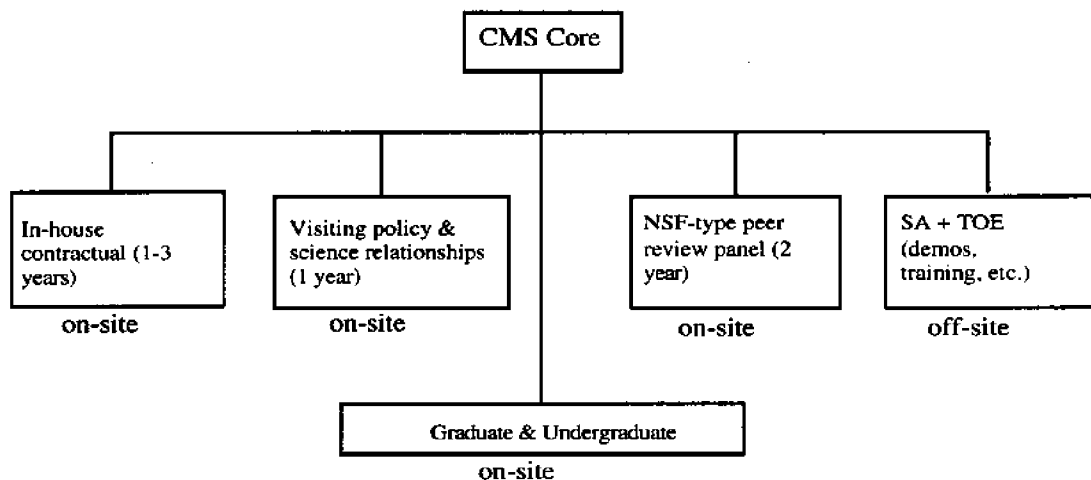
Specific in-house CMS divisions/niches that were considered important to Group A include the following.

1. Already planned:

    a. training/TOE

    b. habitat/ecologist/natural systems

    c. coastal management generalist

2. Recommended additional:

    a. public information officer

    b. ecological economist

    c. legal/policy

    d. quality assurance

    e. use of graduate and undergraduate students for support and outreach

Group B felt that it was important to elaborate on the organizing concepts and principles for CCEH; from these concepts and principles, the organizational structure would follow. Important in shaping the organizational structure were three principles:

1. Rotational approach for assigning staff, to ensure continuing flux of ideas, data and information between CCEH and the regions;

2. Avoiding organizational structures that produce unintended undesirable consequences, e.g., structures that foster a regional versus headquarters, or "us versus them" attitude;

3. Use existing capabilities and services (e.g., Sea Grant, CZM networks, National Estuary Reserve Research System (NERRS), National Marine Sanctuaries (NMS), other federal and state agencies, NGOs, etc.) to the fullest possible extent to build nodes for accessing and exchanging information and data.

These principles led Group B to suggest the following organizational arrangement:

    a. Core/permanent staff - central, long-term.

    b. Rotational professional staff - central, two-year terms.

    c. Short-term visiting scholars/students/ professionals.

    d. CCEH Regional Representatives: with hardware and software needed to support an information and data node.

    e. CCEH Partners: non-CCEH funded but with formally recognized linkages, e.g., CZM, Sea Grant, NERRS , NMS.

    f. Contracted consultants/expertise/scientists.

g. "Advisory" committees

- Technical (Quality Control/Quality Assurance, peer-review)

- Regional User groups/committees

- Management (CZM, planners, etc.).

h. National Review Committee: a "board of directors" comprised of representatives from the above groups. Their role is evaluation and strategic planning.

Group B recommends that the distribution of CCEH personnel be given specific attention. Some staff resources must to be assigned to field locations. Categories a, b, and c are headquarters staff positions; categories d, e, and f are externally located positions. The leaders of the regional user groups/committees should serve as members of the National Review Committee to provide a real-time, regionally based perspective on CCEH activities, directions, plans, and goals.

• **Operational considerations**

The following are specific considerations the workshop participants felt CMS must also be take into consideration in the development and functioning of CMS:

1. Location of staff:

a. distributed some at CCEH, some offsite

2. Logistics:

a. housing, transportation, access/security on base, personal services (banking, etc..

3. Communications:

a. On-line capability, with feedback loop to product development and enhancement.

b. Hardware, software capabilities

c. 1-800 number for real-time access

d. Computer specialist/systems operator/administrator

e. Graphics and publication capability: onsite and/or offsite, duplication/photocopying services

f. Video conferencing facilities

g. Audiovisual facilities and capabilities

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4. Quality Control:

    a. Technical Advisory Committee

    b. Peer-review of all CCEH products

    c. Competitive allocation of funds (minimize sole-source awards)

    d. Ongoing visioning and internal self-evaluation, including staff review of CCEH

Section III. Workshop Activities

Goals

The goal of the first day's discussions were to provide CCEH with a list of priority "process" and "outcome" themes. The division of these two themes recognizes that management requires "process" skills of policy-setting, organization, planning, financing, implementing and evaluating that are central to success in coastal management. Coastal managers also need information on "outcome" issues which are most often the reason a coastal management program exists. The goal was not to prioritize, but to explore the priority issues facing coastal managers and programs today.

Process Themes

Participants were given a short list of Process themes (see Background Paper in Appendix A) developed by Marc Hershman as a starting point for discussion and were asked to elaborate using the following criteria: those themes that are understudied, emerging, or generic. This list includes the original list from the Background Paper and the elaborations and additions to that list.

a. Legal issues - Public trust doctrine: Takings issue: Federal pre-emption; Intergovernmental relations (consistency; water quality certification: Natural resources liability and damages; Water-use planning (ocean/great lakes space utilization)

b. Organizational issues (may require priority attention) - Institutional design; Dispute resolution; Mediation and Negotiation; Facilitation; Public Participation; skills training, policy making issues (top down/ bottom up), integration, collaboration/public-private partnerships

c. Economics and Decision Analysis - Benefit/ cost analysis; impact assessment; Risk assessment; Environmental valuation; Cumulative and secondary impacts

d. Financial Analysis - Budgeting; Cost sharing/recovery; Subsidy; Tax incentives; Hidden subsidies; Market-based incentives

e. Implementation and Evaluation - Program evaluation; Environmental audits

f. Planning - Sectoral; Resource Management; Urban; Growth Management; Land use; Social equity; Regional/ Ecosystem

g. Regulation - Zoning: Standards; Permits; Appeals

h. Asset Management - Inventory; Acquisition; Maintenance and enhancement; Leasing/ Use permits

i. Human Resource Development - Training, Internships

j. education - Behavior modification; Enforcement

k. Adaptive management - Visioning, futuring mechanisms

l. Social (equity)issues: Community concerns; jobs; social/economic benefits of environmental planning

m. Information delivery/access - Communication networks

n. Technology Transfer - Use of science and technology

Outcome Themes

For this facilitated discussion, participants were asked to place themselves 10 years into the future and consider what "outcome" topics CCEH has contributed to, created, or addressed that led to improved management of the coastal zone. The responses to this question varied significantly. Participants wrote out full answers to the question (see Appendix D) and provided short answers that were compiled during the workshop as a group response.

The short responses collected from the participants are grouped into the following categories: 1) responses that addressed improving coastal management; 2) responses that addressed improved coastal ecosystem health; and 3) responses that addressed a current issue of concern. For each of these categories, the responses were grouped into those that were part of providing a service, those that were part of developing new and improved tools, and those that were part of setting a standard. (Please note: the categorization and grouping of outcome issues was done after the workshop, and did not involve the participants. This was done to provide the results in a clear format.)

1. Contributed to improved coastal management by:

a. Providing a service:
- serving as an information and service provider
- product delivery, information synthesis
- center of expertise for synthesis of information
- serves as a "think-tank" to find solutions to problems
- effective electronic delivery systems
- source of information for supporting managers
- translation for alternative management groups
- CMS crisis hotline
- Systems analysis for CM in urban areas
- gov/non-gov information center provided in diagnostic capability

b. Developing new and improved tools:
- provides new tools to deal with coastal management problems
- improve tools for local coastal managers
- center develops spatial decision support system (GIS+)
- model for improved stakeholder involvement process
- provided models for better public awareness
- develop methodologies for valuing non-quantifiable

c. Setting a standard:
- recognized center for expertise
- improved integration and communication within NOAA groups/state groups and between them
- center has won support of CZM managers to the point they would share funds
- center promotes cooperative management partnerships
- center led improved understanding of human activities and their relationship to coastal management issues
- center has defined carrying capacity and influenced reduced population in coastal zone

2. Contributed to improved coastal ecosystem health by:

a. Providing a service:
- Known as the place to call for help

b. Developing new and improved tools:
- develop methods for linking between land-use and non-point source pollution
- tested, synthesized, and disseminate methodologies for assessing cumulative impacts
- center creates a model program, locally defined, that deals with integrated management targeted issues
- develop tools and techniques to assess coastal ecosystem health

c. Setting a standard:
- center develop consensus that defines coastal ecosystem health and key roles that NOAA/state/local have in this health
- center advances theory and practice of coastal ecosystem management
    - advancing state of the art
    - develop integration through innovative institutional arrangements
    - adaptive management concept developed
    - assisting states and others in technology and training
    - comparative analysis of coastal ecosystem management

3. Contributed to the current issues of concern by:

a. Providing a service:
- Needs identification
- Implements effective outreach on ecosystem/economic interface
- Provides process and technical assistance for capture fisheries and aquaculture
    - permits, institutional
- Water quality monitoring and technical training

b. Developing new and improved tools:
- Special area management plans for integrated estuarine and ocean area planning
- Draft model ocean resources management act

c. Setting a standard:
- Real problems solved: helped state and local communities reopen <u>shellfish beds</u>
- Center addresses <u>sea level rise</u> in coastal areas in US
- Facilitated <u>non-regulatory approaches</u>: e.g.. land trusts
- Helped guide <u>growth</u> to less sensitive less hazardous areas
    - adaptive reuse of land
- <u>Water quality</u> improvement
    - <u>fisheries</u>
    - <u>ocean recreation</u> improvement through community based planning networking
- Center addressed
    - <u>private property rights</u>
    - increased response to <u>cultural diversity</u> in coastal zone
- Completion of systems of <u>reserves/ sanctuaries</u> facilitated through center
- Center contributed to <u>open access</u> to coastal zone
- Center of expertise in <u>dredge spoils</u>
- Contributed to <u>nuclear waste</u> issue

At the end of the first days' discussions of process and outcome themes, participant Bob Knecht offered some additional questions for the participants to consider. These were not fully addressed at the workshop but may be important for CCEH to consider.

a. What should be done on a National level that is/has not been done?

b. How should available moneys be spent?

c. What is the role of the users in Center governance?

d. Is co-location the only way?

e. What capabilities, needs, services do users need?

f. What other commitments have already been made by CCEH?

Knecht also offered additional criteria to be considered: survival issues (takings, legal issues), issues with early success, those projects where a small effort equals a large benefit.

Capabilities, Organization and Approach

The goal of this discussion was to provide CCEH with recommendations on the ideal capacity, organization and approach for Coastal Management Services. For the second day of the workshop, the participants were divided into two groups ; Group A, "The Spits"; and Group B, "The Bars". Each group was assigned a leader and a rapporteur. Each group approached the assignment differently. Group B approached the assignment with a highly structured discussion. Group A approached the assignment in a more open fashion, discussing the finer details of how CMS should be structured and function. Each group produced a short report of their discussions, the condensation of which is the Summary Report found earlier in these proceedings. Group B provided an excellent framework for this report and Group A provided the finer details. The individual group reports can be found in Appendix E.

Section IV. Conclusions

• This workshop produced a set of Principles for Success (see page 11) that participants felt could not be labeled as recommendations, but must be considered as essential to the Center's effectiveness and ultimate survival.

• This workshop was successful in exploring the range of process and outcome themes that are important to coastal management practitioners. The workshop did not provide a prioritized list of topics as originally planned, but did provide CCEH with a range of options to choose from.

• Many of the recommendations in this report serve as validation that the work CCEH has already undertaken is what the experts are calling for. Other recommendations show where the "holes" are in center organization, program development, and in the services and information CCEH/CMS is attempting to provide.

• A recurring message coming from the participants was that users should be involved in all stages of the Center's development. An institutionalized process to ensure this involvement was called for as a crucial next step in the Center's development.

• The participants believe CCEH has the potential to play a significant role in the future of coastal management if CCEH provides: 1) the information and services needed in forms that are useful; 2) develops new and improved tools coastal managers need; and 3) takes the initiative and sets the standards for coastal management, coastal ecosystem health and for the current coastal issues of concern.

• The Summary Report was well received at a CCEH Management Committee meeting held in January, 1995. Workshop co-chair Marc Hershman discussed the Summary Report and selected representative responses to the Outcome Themes question. In his review of these responses, Hershman pointed out that they appeared to fit into four categories. Participants appeared to be calling for :
   1) A "visioning" and defining role for CCEH - in Ecosystem Health and Management, and in assessing the State of the Coasts;
   2) Human resource development through paid post-graduate internships;
   3) An increased quantity of well-functioning marine habitats resulting from Center efforts; and
   4) CCEH leadership in designing a new paradigm in government service based on user involvement.

Appendix A: Background Paper

CCEH/CMS Scoping Workshop

Background Paper (12/7/94)

by

Marc J. Hershman
and
Elizabeth Reynolds

I. Introduction

This workshop was conceived in the summer of 1994 as a vehicle for providing NOAA

additional information on shaping the Coastal Management Services (CMS) portion of the

Center for Coastal Ecosystem Health (CCEH). An April 1994 workshop held in Charleston, SC,

initially addressed this topic and since then NOAA has been working on the FY 95 Work Plan

for CCEH which further defines the functions and activities of the CMS. The concept was, and

remains, that the considerable expertise and products generated by the research and extension

community, primarily based at universities but also including NGO's, agencies and consultants,

can be effectively used and built upon by the CCEH/CMS. NOAA asked Marc Hershman and

Paul Scholz to Co-chair the workshop. An early date was chosen for the workshop because of the

desire for rapid start-up of the CCEH, thus constraining preparation time. A steering committee

was formed (identified on the workshop roster) which met on October 27, 1994. This

background paper was prepared by the authors to stimulate and structure discussions. It was not

reviewed by the Steering committee or other CCEH officials because of time constraints.

Workshop Objectives

Five objectives were developed for this workshop:

1. To elaborate on the description of the Coastal Management Services function of the CCEH outlined in the FY 95 Work Plan .

   What has already been accomplished? What can be learned from a historical evaluation

   of this work? What problems should CMS be responding to in the future?

2. To identify the capabilities of the University-based research, teaching and extension community, and the capabilities of other communities associated with coastal management (e.g. NGOs, Consultants), to contribute to the CCEH/CMS.

   This objective requires documenting and reviewing research on the practice of coastal

   management, as well as the methods for providing information to the practitioner

   community.

3. To propose an organizational structure for continuing collaboration with the University-based community, and other communities associated with coastal management.

   This objective takes the results of Objective 2 one step further by developing an

   organizational structure between CCEH and the University-based community that will

   utilize the capabilities that have been documented.

4. To propose an organizational structure for students and recent graduates to contribute to the CCEH.

   Human resource development techniques include internships, opportunities for graduate

   study, post-graduate fellowships and other mechanisms.

5. To propose a prioritized list of projects, or topic areas, for implementation over the next few years.

   Coastal management experts with knowledge of practitioner needs and available sources

   of information need to focus on the topics CMS should emphasize. Federal management

   agencies have initiated projects in non-point source pollution control and habitat

   protection to be implemented through CCEH.

Participants

The workshop participants were chosen to reflect general diversity goals, as well as to provide balance between the research and practitioner community, various regions of the country, and subject matter expertise. The steering committee assisted in developing a long list of names and in choosing the invitees. The group was kept to a small number to facilitate dialogue and interchange.

Workshop Product

The steering committee decided that the product of the workshop should be a report to NOAA leadership that gives clear recommendations about next steps for the CMS portion of CCEH. Although aimed at CCEH policy makers and implementers, the document should be useful to any interested person and thus would need appropriate background and explanatory information. The workshop Co-chairs, with review by the steering committee, would draft the final report reflecting the workshop results.

II. Themes

Coastal Management is a broad concept that has been given many definitions. For the purposes of this workshop, it is not necessary to agree upon a firm definition, but it would be useful to recognize certain characteristics of coastal management. First, the *management* side of coastal management must be given prominence. That is, the actions taken in a purposeful way to change peoples behavior regarding the coast and its resources is central. Thus, information and other services generated to support coastal management must be closely related to management functions and time-frames. Second, coastal management is practiced by many governmental and non-governmental entities. It is not the province of only one statutory program. Thus, terminology and needs will vary greatly and there will be many views about the relatedness and importance of information and other services. Third, the topics of interest to coastal managers

change over time and often reflect broader national and international themes. This can be seen today where interest in "ICZM" within international organizations is influencing the scope of coastal management practiced in the US. by emphasizing sustainable development and equity themes.

Coastal Management Services will also have a wide range of meanings. The NOAA Work Plan provides an initial breakdown into services that are "syntheses and applications" (S&A) and those that are "training, outreach and education" (TO&E). These might be restated as "information services" (S&A) such as compilations, literature reviews, source books, analyses, etc.; and "human resource services" (TO&E) emphasizing improved knowledge and capability among people concerned with coastal management. S&A differs from traditional "research" which is done through many other governmental programs by emphasizing timely delivery and interpretation of management relevant information. TO&E might include continuing education for professionals, advisory services, and internships/fellowships/post docs. In preparing for this workshop we have chosen not to separate these two aspects of coastal management services since they are closely related. Efforts in S&A ought to be used in TO&E and the results of TO&E ought to suggest new activities in S&A.

The *users of coastal management services* need to be defined. The user group could include anyone with a coastal management interest. However, in structuring CMS it would be highly useful to make the user group more precise so that the target audience is clear for initial planning. For example, the user group could be individuals and organizations involved in the implementation of, or interacting directly with, the following coastal management programs in the US at all levels:

Coastal Management programs stemming from the CZMA

National Estuarine Research Reserves

National Marine Sanctuaries Program

Coastal Barrier Resources Program

National Estuary Program

Coastal Habitat Programs of NMFS and USFWS

Work/Discharges in Navigable Waters (10/404)

Flood Insurance and Disaster Protection

This list is not all inclusive, but does reflect program activities that could be considered "centrally concerned" with coastal management. Virtually all have national, state, substate/local dimensions. The officials and constituencies participating in these programs most likely encompass all interests concerned with coastal management. Since the missions and scope of these activities can be identified, it is easier to list the "target" topics and clientele of CCEH/CMS. Accountability may be easier as well since the linkage of CMS to specific program goals and activities will be possible.

Criteria for design of the CMS function can reflect a number of varying factors. The following criteria are proposed:

a. Maintain a national perspective

Given the likely level of effort of the CMS function it would not be cost effective to simply divide the available funds and promote regional or state activities. Each of the identified programs shown above under "users" has an important national dimension (funds, source of power, approval authority, etc.). There are other marine programs that are decentralized (see IV below) and serve state or regional interests exclusively but virtually none that are designed to assess the national picture or provide comparative analysis. Comparative study provides a source of ideas, appreciation of diversity, and may lead to suggested improvements.

Maintaining a national perspective does not mean that state or regional participation is lost. A comparative approach requires drawing into a project individuals and offices that are located

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in various regions and who play an active role in designing programs and projects and participate in information development and dissemination.

b. Require User participation

Defining CMS activities and evaluating results should be a combined task of the users and the researchers/information providers. Users can ensure relevance, timeliness, and audience. Researchers can ensure that work builds on pre-existing efforts, and maintain quality control through peer review of proposals and products.

c. Link S&A and TO&E

To the extent possible an S&A project should lead to a TO&E effort. For example comparative information gathered on a management topic should be followed by training or technical assistance building on that work. There may be times when this is inappropriate as when information collected is inadequate or inconclusive, or when TO&E can proceed with existing information. Also, TO&E can identify S&A needs. In any event, it would be desirable to have closely collaborated efforts.

d. Emphasize emerging and/or understudied issues

There will always be more topics needing study than resources available. Emerging or understudied issues are additional criteria to help make the hard choices. Examples of emerging issues particularly relevant to CZM programs because of the program linkage question include coastal watershed management, growth management, and habitat restoration. Understudied issues (in the authors opinion) include review of federal consistency practice, water dependent use preferences, and special area management planning.

e. Emphasize generic issues

It is easy to identify issues that are particular to specific programs. However, efforts should be made to identify common issues that many coastal management program activities listed

above share. These could be such issues as impact assessment or risk analysis for particular resources, or institutional issues common to many programs such as private property rights and intergovernmental relations.

f. Ensure peer review and quality control.

It is critically important that products and services of CCEH/CMS be seen as authoritative and reliable. This requires that the process include steps for peer review of project proposals and final products. Related is the issue of conflict of interest. Since those helping to design project needs may also be potential investigators, the rules for insuring fairness must be clearly set out and adhered to.

Substantive topics are divided into "process" and "outcome" topics. This division recognizes that management requires "process" skills of policy-setting, organization, planning, financing, implementing and evaluating that are central to success in coastal management and which have their own sources of information, methods and literatures. Additionally, coastal management needs information on "outcome" issues which are the "reason for being" of coastal management programs. Outcome issues are the more traditional ones listed when we talk of coastal management topics and have been discussed at earlier workshops about CCEH.

Process topics are less often listed and classified compared to outcome issues but could include the following:

    a. Legal issues Public trust Doctrine; Takings issue; Federal pre-emption; Intergovernmental relations (consistency; Water Quality certification); Natural Resources liability and damages; other.

    b. Organizational Issues Institutional design; Dispute Resolution; Mediation and Negotiation; Facilitation; Public Participation

    c. Economics and Decision Analysis Benefit/cost analysis; impact assessment; Risk assessment; Environmental valuation

    d. Financial Analysis Budgeting; Cost sharing/recovery; Subsidy; Tax incentives

    e. Implementation and Evaluation Program Evaluation; Environmental audits

f. <u>Planning</u> Sectoral; Resource Management; Urban; Growth Management; Land Use; Social Equity; Regional/Ecosystem

g. <u>Regulation</u> Zoning; Standards; Permits; Appeals

h. <u>Asset Management</u> Inventory; Acquisition; Maintenance and Enhancement; Leasing/Use permits

i. <u>Human Resource Development</u> Training; Internships

Outcome topics have been described by many authors in various classifications. The following

are from two recent studies:

From Sorensen and McCreary, 1990: Global Issues Index
    1. Impact issues
        a. Estuary, harbor and inshore water quality impacts
        b. Ground water quality and quantity
        c. Filling of wetlands (including mangroves)
        d. Mangrove impacts
        e. Coral reef and atoll impacts
        f. Beach , dune and delta impacts
        g. Fishing effort
        h. Access to the shoreline and subtidal area
        i. Visual quality
        j. Employment and cultural values
    2. Hazards
        a. Shoreline erosion
        b. Coastal river flooding
        c. Storms (wind, wave and water damage)
        d. Tsunamis
    3. Sectoral Planning
        a. Fisheries development
        b. Natural area protection systems
        c. Water supply
        d. Recreation development
        e. Tourism development
        f. Energy development (particularly ocean thermal energy conversion (OTEC))
        g. Port development
        h. Oil or toxic spill contingency planning
        i. Industrial siting (often in conjunction with increasing employment in depressed or impoverished areas
        j. Agricultural development
        k. Maricultural development

From Beatley, Brower and Schwab, 1994: Critical Coastal Management Issues
    1. Coastal storm mitigation
    2. Shoreline erosion and sea level rise
    3. Strategic retreat or coastal reinforcement
    4. Protection of coastal wetlands and resource lands

5. Protection of coastal waters
6. Biodiversity and habitat conservation
7. The coast as a recreational commons: protecting access to beaches and shorelines
8. Private property versus the public interest in coastal planning
9. Urban design and protecting community character

III. Capabilities

An objective underlying this workshop is to build on current capabilities as much as possible.

Considerable "service" has been rendered to the coastal management community over the past

two decades. This has included information services as well as human resource services. For

example, in the 1970s NOAA had a modest information and technical assistance program and a

Coastal Zone Information Center. Marine affairs and policy programs have trained many of the

professionals now working in coastal management. Sea Grant has played a role nationally in

providing research and advisory services in support of coastal management, though it has not

been a major part of their effort. And, management agencies themselves have committed

resources to service functions to the extent budgets permit.

There are many individuals and organizations that have supplied *synthesis and applications*

information over the years. Much of this has been in support of state and local coastal

management work. Some of the work has synthesized information and trends at the multi-state

and national levels. The individuals and organizations involved have included:

1. Management organizations, especially those with policy units. Often their products are

tied to specific mission responsibilities which flavors the output.

2. University-based applied researchers and research programs: There are hundreds of

individuals and dozens of organizations in the country and they have been funded by Sea

Grant, NSF, Federal and State agencies, and others.

3. Non-governmental organizations have begun to develop information documents in recent

years on selected topics - often designed to advance particular policy goals but including

invaluable information.

4. Consultants have played an important role as well, serving public and private clients. Unfortunately, retrieving consultant generated information is often difficult.

A sizable literature has emerged about coastal management practice. Many books have been written about practice and methods. There are three major marine-oriented journals concerned with coastal management that have been publishing for twenty years. Selected other journals in law, planning, engineering and science publish special issues on coastal themes. There are scores of proceedings volumes related to coastal management from conferences. Lately an entire new literature is emerging tied to international initiatives to develop ICZM programs around the globe.

Similarly, there has been effort in *training, outreach and education.* Management agencies have spent a lot of time on outreach and education in support of their mission. Sea Grant advisory services has contributed coastal management services in selected parts of the country. The nineteen marine affairs graduate programs and research centers around the country have emphasized formalized training leading to academic degrees. Only recently have modest efforts begun at "continuing education" or specialized training for professionals, and much of that has been aimed at officials from developing countries. Finally, NGO's, Aquariums, Reserves and Sanctuaries, Science Centers and other marine oriented organizations have developed elaborate information/education programs.

Workshop participants should be in a good position to elaborate on existing capabilities to provide coastal management services. A number of questions should be posed. Are services adequately provided with respect to some topic areas, or geographic areas, but weak in others? Are there opportunities to add modest new resources to an existing effort and gain significant additional services? Have existing services been aimed at the right communities of people?

IV. Organization and Approach

A key question for the workshop to discuss is how to organize to provide better coastal management services in the future. On the assumption that there will be funds to enhance coastal management services, what kind of process will work effectively and efficiently toward that end and meet the criteria outlined above? The recommendations to NOAA leadership should include a discussion of ways to organize and the approach to follow in the short term.

One way to approach this discussion is by examining the organization and approach of related programs. Five programs are described below that generate information that could be useful to managers. They are a mixed bag of examples but each has been used for marine-related activities. In most cases they are more "research" oriented than may be envisioned in CCEH/CMS. The objective in presenting the examples is to stimulate thinking about organizational possibilities. Ideally the best experiences from these and other examples would be drawn upon, and the pitfalls avoided. Many other examples of service entities in non-marine programs (Agriculture, Forestry, Water Resources, etc.) could be researched in future efforts if warranted.

1. National Coastal Research Institute

NCRI was established by federal legislation in 1984 to translate scientific and technological information into economic gains that will improve the coastal condition; foster scientific and technology transfer that will spur innovation and encourage competition within coastal industries; serve as a source of knowledge to enable coastal communities and businesses to solve problems themselves; and serve to continually update and describe the condition of the coastal economy.

NCRI is under the Department of Commerce, and Administered by Portland State University in Oregon. Its budget ranges from 1 to 1.3 million dollars per year and 60% to 75% of this goes toward funding proposals.

Through policy and procedures developed by a Board of Governors, NCRI solicits and awards contracts on a competitive basis. The Board of Governors is made up of designees from the five Governors of the coastal Western States and has the final say on funding decisions. An Advisory Council consisting of ocean and coastal resource specialists from all coastal regions of the country, provides recommendations to the Board on the annual selection of projects. In reviewing proposals the Board asks: Will the project make a difference? Will the work have a positive effect on the targeted industry or community, and will the development or improvement of the industry benefit the regional or national coastal economy?

Reference:

National Coastal Resources Research & Development Institute. 1994. Priorities and Funding Opportunities for Technology Transfer for Coastal Economic Change for Fiscal Year 1995.

2. Regional Aquaculture Centers

Recognizing the opportunity for making significant progress in aquaculture development, Congress included in the Agriculture and Food Act of 1980, the authority to establish up to four aquaculture centers in the US in association with colleges, universities, State Departments of Agriculture, Federal facilities, and non-profit private research institutions. Regional Aquaculture Centers were established for aquaculture research, development, and demonstration, for the enhancement of viable and profitable commercial aquaculture production in the United States, for the benefit of producers, consumers and the US economy.

The Centers were intended to be utilized as a national program of cooperative and collaborative research, extension, and developmental extension activities among public and private institutions. Center programs are intended to complement and strengthen existing research and extension educational programs provided by the Department of Agriculture and other public institutions. The Centers are expected to utilize existing institutional mechanisms and linkages to implement programs.

The Secretary of Agriculture is responsible for the overall administration of Aquaculture Regional funds on a national level, and direct responsibility has been delegated to the Cooperative State Research Service. At the regional level, a Board of Directors maintains overall responsibility for the preparation, submission, and subsequent completion of approved regional project proposals. The Board is made up of 17 representatives from western states. A Technical Committee and an Industry Advisory Council serve as advisory groups to the Board of Directors.

Proposals are presented orally and in writing to the Technical Committee and the Industry Advisory Council. These bodies then make a joint recommendation to the Board of Directors which then makes recommendations to the USDA on which proposals should be funded at what level of funding. Often the main criterion for the Board in selection of proposals is whether a tangible outcome for the aquaculture industry will result.

Each Regional Aquaculture Center has its own administrative center. The Western Regional Aquaculture Center has a yearly budget of approximately $764, 000. In FY94 approximately $611,000 went to fund proposals.

Reference:
Western Regional Aquaculture Center. 1994. WRAC Manual for Cooperative Regional Research.

3. Regional Marine Research Programs

Title IV, Regional Marine Research Programs (RMRP) (Public Law 101-593) attempted to establish nine regional marine research programs around the country. The act divided the nations marine and coastal waters into nine regions. The boundaries of the regions were to coincide with ecological boundaries where possible, rather than with jurisdictional boundaries.

The RMRP legislation called for an appointed board for each region, to provide the policy oversight and decision-making for the program. The board members were expected to prepare a research plan for the region, and to solicit research proposals for funding under the plan. The boards were also called upon to: provide a forum for coordinating research among institutions and agencies; provide for review and comment on the research plan by affected users; ensure that all research projects funded under the program are of high quality; and prepare periodic reports for Congress on marine environmental research issues.

The research plan created by each eleven-member regional board must be approved by NOAA and EPA Administrators before projects can be funded under the RMRP. Regional Boards are expected to solicit research proposals which best suit the needs of the region, as specified under the regional plan, and to submit a proposal to NOAA and EPA for funding once a year.

Reference: Regional Marine Research Plan for Pacific Northwest

4. Sea Grant

In 1966, Sea Grant was created by the National Sea Grant College Program Act as a marine analog to the Land-Grant College System. The National Sea Grant Office was set up in 1967 under the National Science Foundation. After the creation of the National Oceanic and Atmospheric Administration (NOAA) in 1970, Sea Grant was incorporated into this new organization. It now sits under the NOAA Office of Oceanic Research Programs by way of the office of Oceanic and Atmospheric Research.

Sea Grant was the brainchild of Senator Athelstan Spillhaus. The concept was to encourage the skills found in universities to be used to deal with marine problems. Sea Grant Colleges were created to not only concentrate on applications of science to the sea, but also to relate these

applications to the natural and social sciences. There is now a network of 29 Sea Grant colleges and institutions.

Sea Grant has a funding cycle managed at the state level. The fist step is for investigators to submit a preproposal to the state level program. Preproposals are reviewed and selected to form the strongest overall program. Selected preproposal investigators are invited to submit a formal proposal. Each program solicits proposals for its area using selection criteria based on state and national needs. The programs provide a peer review process for each formal proposal. After investigators are given an opportunity to update the formal proposals they are submitted as an institutional proposal to the National office. The institutional proposal includes a prioritized list of proposals with suggested funding levels. The national office then reviews the proposals from all the programs and makes funding decisions.

Federal enabling legislation provides up to two-thirds of the total program costs. Non-federal matching funds are required for the remaining program expenses. Despite efforts to remove Sea Grant from the federal budget throughout the 1980's and into the early 1990's, the National Sea Grant program has maintained a budget of approximately 46 million per year.

Sea Grant also provides a fellowship program for graduate students interested in marine policy. The Dean John A. Knauss Marine Policy Fellowship matches qualified graduate students with hosts in the legislative branch, the executive branch, or associations/institutions located in Washington DC. for a one-year paid fellowship.

References:
Washington Sea Grant Program. 1994. Call for Proposals Biennial Program for Calendar Years 1995-1996.

Keiffer, Elizabeth (ed.) 1985. Sea Grant Week '85: A Summary Report. Twentieth-Year Commemorative Anniversary.

National Research Council. 1994. A Review of NOAA National Sea Grant College Program.

4. National Research Council

The National Research Council (NRC) sets up Commissions, Committees and Panels of experts to study issues of national importance. Panel members are specifically selected to represent all stakeholders concerned with a particular issue. These panels help to shape the design of the study, determine information sources, and guide the development of recommendations and proposals. Staffing for the panels is provided internally by NRC but often the Panel members assist the staff in many ways.

Studies are paid for by federal funds from specific agencies and programs. The reports resulting from these studies go through an extensive peer review process to ensure accuracy and fairness. The reports are given significant weight in the policy community due to the sponsorship of NRC which is part of the National Academy of Sciences.

The NRC has no power to implement recommendations or proposals. They provide information through a carefully structured study and report. Typically the Panel then is dissolved or turns to a new topic. Some committees develop extensive expertise because reports build on one another over time.

Appendix B: Agenda

NOAA/CCEH Coastal Management Services Workshop Agenda
December 12-14, 1994
Charleston, South Carolina

Monday, December 12		
Chinese Parasol Room		
8:00 - 9:00	Pre-meeting coffee/tea	
9:00 - 9:05	**Opening Welcome**	Curt Mason
9:05 - 9:15	**Presentation of Results from April '94**	Joseph Uravitch
9:15 - 10:00	**Presentation of Vision for Operations and Current Mission Statement for CCEH/CMS**	Paul Scholz
10:00 - 10:30	**Background** Review of Background Paper	Marc Hershman
10:30 - 10:45	Break	
10:45 - 11:15	**Discussion of Background Paper** General discussion of Definitions, Themes, Capabilities, and Options for Organization and Approach	Marc Hershman
11:15 - 12:00	**General Discussion of CCEH and Workshop Objectives**	Dave Evans and Marc Hershman
12:00 - 1:30	Lunch	
1:30 - 2:45	**Discussion A: *Process Themes*** (Refer to background section II.) What are the process issues of management that CCEH/CMS should address, eg., legal issues, organizational design, economics, administrative reform, mediation and negotiation, etc.; and what is their relative importance?	Facilitator: Marc Hershman
2:45 - 3:00	Break	
3:00 - 4:15	**Discussion B: *Outcome Themes*** (Refer to background section II.) What are the substantive topics that CCEH/CMS should address, eg., impact issues, hazards, sectoral planning, etc.; and what is their relative importance?.	Facilitator: James Good
4:15 - 5:00	**Review** Goal: agree upon a working list of process and outcome themes that five years from now, we want CCEH/CMS to have made major contributions to.	Facilitator: Bob Knecht
6:30	Working Dinner	Ginkgo Room

NOAA/CCEH Coastal Management Services Workshop

	Tuesday, December 13 Chinese Parasol Room	
8:30 - 9:00	**Plenary:** - Review of Monday's Discussions - Introduction to Today's Sessions	Paul Scholz and Marc Hershman

9:00 - 10:30	**Capabilities, Organization and Approach**
	Break into groups A and B by assignment
	
	(Refer to Monday's Results, and Background section's III amd IV)
	
	Questions:
	1)a. What coastal management services are currently available and who provides them?
	   b. What are the strengths and weaknesses of current services to respond to process and outcome themes?
	
	2) a. What are alternate models for organizing and managing new coastal management services?
	   b. What elements of these models might best address process and outcome themes?
	
	Product: What is the ideal capacity, organization, approach for Coastal Management Services? Each group should provide a two page description of the group's discussion and a one page outline of the best elements for CMS to consider for the Synthesis and Application, and Training, Outreach and Education components.
		Group A Leader:
		Paul Templet
		
		Group A Rapporteur:
		Betty Spense
		
		Location: Chinese Parasol Room
		
		————————
		
		Group B Leader:
		Rick DeVoe
		
		Group B Rapporteur:
		Miles Croom
		
		Location: Akebi Room

10:30 - 10:45	Break	
10:45 - 12:00	**Continuation of Break-out Sessions**	
12:00 - 1:00	Lunch	
1:00 - 3:00	**Completion of Break-out Sessions**	
3:00 - 5:00	Group findings written up into report form.	
5:00	**Report due from each group**	
Evening	Dinner on your own	
5:00 - 7:00	**Committee on Conclusions and Recommendations** (For Workshop Co-chairs, Group A and B Leaders and Rapporteurs, and Workshop Coordinator and Curt Mason)	

NOAA/CCEH Coastal Management Services Workshop

	Wednesday, December 14 Chinese Parasol Room	
9:00 - 9:30	**Break-out Session Reports**	Presentations by leaders of each group
9:30 - 10:00	**Recommendations for Next-Steps** Results from Committee on Conclusions and Recommendations	Paul Scholz and Marc Hershman
10:00 - 11:30	**Discussion** Seeking consensus on report and recommendations to NOAA leadership	Paul Scholz and Marc Hershman
11:30 - 12:00	**Wrap-up**	

Appendix C: Outcome Themes Full Responses

Written responses to the question: Put yourself 10 years down the road... What substantive problems/ concerns has CCEH addressed that resulted in improved management of the coastal zone?

These responses have been recorded verbatim and have been edited only to spell out acronyms or abbreviations. They are presented anonymously and the numbers do not represent a priority order. A total of 27 responses were handed in, 26 are reported here.

1. a. The CCEH has defined and measured a well-respected "state-of-the -coasts" index (multiple parameters) that provide the public and policy makers with a measure of coastal management accomplishments and bellwether of future problems.

b. CCEH has developed and coordinates an integrated GIS that addresses a variety of cm issues of local, regional and national concern.

2. Advance the theory and practice of coastal ecosystem management ("ecosystem" includes both the natural and social systems). This includes:

a. advancing the state of the art in approaches, strategies, methodologies for coastal ecosystem management.

b. developing innovative institutional approaches for dealing with multi-jurisdiction, multi-agency, and multi-stakeholder situations (to achieve integration).

c. developing further the concept of adaptive management (where you introduce management changes based on systematic observation of emerging effects)

d. assisting states and localities and other users in employing ecosystem management approaches, strategies, and methodologies.

e. provide training to states, localities and other users in the above approaches, strategies and methodologies.

f. Through systematic comparative research, analyze cases and experience in coastal ecosystem management around the nation to gauge what approaches work best under what circumstances/conditions.

3. a. Healthy Ecosystems and Communities

b. Coastal Water Quality has improved: healthy fisheries habitat, ocean recreation possible, red tides reduced.

c. Via community based management organizations set-up and initially guided by CCEH. Maintained via info networks that tap CCEH resource base.

4. a. Provided written (hard copy) and electronic synthesis documents to describe and summarize results and recommendations regarding problems such as abatement of NPS, coastal habitat assessment, and habitat restoration techniques based on science/research that addressed pressing coastal management issues.

b. Provided training sessions, workshops, and a coastal management crises hotline for easy access and participation by federal, sate, tribal, academic, NGO, private industry/ citizen user groups. Hotline provides answers within 1 hour.

c. Development and placement of a common-protocol user-friendly spatial decision support system into the hands of all coastal partners/ CCEH associates. The GIS capability should operate on the scale of meters (not kilometers) to provide guidance for local permit review and decision criteria.

d. Host/ lead development of International Center for Coast and Ocean (Parallel w/ CCEH on International Scale).

5. a. Developed Consensus on What Coastal Ecosystem Health is and the key roles which NOAA and the States have/play in achieving it.

b. Improved the integration and communication among NOAA groups, state groups, and between these groups.

c. Achieved improved decision-making through techniques information and technologies toward coastal ecosystem health.

d. Enhanced capabilities to "monitor" status and "project" trends in ecosystems.

6. a. Substantive concern: Need to develop the capability to achieve collaborative policy development and program implementation in coastal zone management using community-based planning, interagency coordination, and public-private partnerships.

b. How: Publication of series of reports that provide

- survey of CZM programs use of facilitation and alternative dispute resolution process skills in planning and policy development

- survey of CZM programs' efforts in interagency coordination

-survey of public- private partnerships in CZM

- analysis of cost-effectiveness of such programs

-examples of useful community-based CZM and public-private partnerships.

c. Network of contacts in federal, state, local government and NGO for above programs.

d. Training in facilitation and alternative dispute resolution for those with content expertise in CZM.

7.a. The center is recognized as the leader in 1. Identification and definition of critical coast and ocean use issues; 2. development of products and information synthesis tailored for application to management needs and 3. the delivery of those products and services to the manager via electronic technologies and interactive media.

b. The center represents the new paradigm in governmental service by being horizontally structured, organizationally flexible and operationally adaptive through rigorous and ongoing process of program evaluation and assessment of effectiveness.

8. a. Increased quantity of well functioning marine habitats including wetlands, submerged aquatic vegetation and other shallow water/intertidal habitats.

b. Establishment of public private harbor management councils at local level to work at improved multiple use management, environmental restoration and public use.

c. Established program of 20 paid post-graduate internships for coastal management services awarded competitively - interns placed in coastal agencies.

9. a. CCEH has developed an information delivery system that has enabled coastal managers to easily access the best available data in a readily understood form for use at local and regional levels and have mechanisms for tracking inquiries to completion.

b. Repository of coastal ecosystem information

c. Electronic access "user-friendly"

d. Has become the "place to call" i.e. Do not necessarily have answers to every question, but can direct inquiries to best available source of information and/or can provide technical assistance towards answering specific questions in a timely fashion.

10. Problem addressed = relationship of human activities to coastal resources specifically water/wetlands quality and develop capabilities to serve sustainability of people and biota.

11. Methods for management of resources that require changes or takings in public rights or property rights: 1) large protected areas; 2) ITQ's; and 3) Captured fisheries - aquaculture, re-stocking.

12. a. Cooperative management of coastal resources is the predominant US management model. Substantially patterned after the successful CCEH partnership/ cooperation experiments.

b. CCEH has been named the preeminent coastal management think tank/problem-solution platform in the world. This has been accomplished by bringing together those with problems together with those who want to find solutions to the problems.

13. a. The first place local and regional officials turn to obtain useful information about pressing coastal management issues.

b. The best source of information on backing up (technical information) management strategies.

14. a. Developed method to identify a causal link between land uses and polluted runoff on a watershed. (Necessary for creating awareness/political will to address problem.) How: perhaps - or most likely - relying on remote sensing technology.

b. Tested synthesized and disseminated methodologies for assessing the cumulative impacts of development on the range of coastal resources.

c. Helped foster development of public info and outreach materials to educate the lay public about the adverse impact of the takings doctrine on such public interests as access, open space, and reducing the public expense of coastal hazards.

d. Helped advance techniques to mitigate adverse impacts of development on wetlands (e.g. accepted performance standards)

e. Document the value (econ. and non-econ.) of coastal management.

15. a. Problem: 10 years ago, the average person in area x did not give a damn about the coastal zone. Solution: Center aided area x leaders by providing models for better public awareness/education and provided contacts and its own expertise to choose the model and implement it.

b. Problem: 10 years ago, there were several gaps in coastal zone theory and activities. Solution: Center assessed and filled gaps.

16. a. Coordinated information from many government and NGO sources so that it is easily retrievable in a useful format by decision makers - diagnostic oriented problem-solving,

b. Control of non-point source nutrient and pesticide....(remainder not legible).

c. Coordinated improved agricultural development processes to reduce erosional loading to coastal wetlands.

17.a. Through the Center's leadership and involvement CZM has moved forward to fulfill - the largely unfulfilled part of its mandate - the development of a holistic planning/ management regime that includes estuarine waters and the ocean. [This is] by extending planning beyond

the shoreline into and joining waters (ocean resource planning). How: Center took the lead in providing information on user conflicts and methods for resolution with an emphasis on local government involvement. Information exchange between various levels of government, agencies within government and user groups.

b. Through the Center's leadership and involvement CZM has resolved many of the formerly contentious issues surrounding private use of public trust waters. How: Provided information on equitable leasing schemes.

18. a. Completion of national system of marine and coastal protected areas (NERRS, NMS) based on cooperative agreements between federal and state agencies facilitated by the center.

b. Improved water quality in estuarine areas due to: analysis and distribution of water quality monitoring data (standardized); and technical trainings on restoration for coastal managers.

19. a. Definition of the term "Coastal Ecosystem Health" (Develop Consensus)

b. Serves as the center for the quality-controlled synthesis and analysis of existing info on priority CEH issues(ID's by users) and identification of data gaps

c. Development and use of environmental techniques/tools to assess and predict CEH (= Carrying Capacity - given: Natural Resource Avail, Use and Impact; Social Needs; Economic Growth)

d. Use of innovative mechanisms to deliver such information (2+3) to user communities (including managers)

20. a. CCEH is recognized as having facilitated the development of a water shed landscape based planning and zoning capability which integrates socioeconomic information, demographic data and trends, regulatory and permitting programs, and coastal hazard information that can be applied to identify and prioritize habitat protection needs and options,

b. In 10 years, CCEH will have drafted a model Organic Coastal and Ocean Resource Management Act.

21. The Center improved implementation of national coastal policies and developed tools that can be used by practitioners at the local level. It backed some local initiatives from getting off the ground by providing resources to locally defined solutions to improved coastal ecosystem health.

The Center achieved this by collecting information on successes, analyzing and coordinating existing federal policies and by listening. Listening, in other words, is recognizing that infrastructure, laws, politics, history, culture, values and priorities differ in every community and then actively seeking innovative ways of implementing broader objectives.

To accomplish this new sense of governance, the center would employ individuals from local communities - elected officials, planners, resources managers, community leaders - on an internship basis to gain the foresight and information necessary to remain flexible in policy development.

22. Center has helped CZM cope with:

a. increased concern and controversy over private property rights and fact that now had biggest exchange of wealth in history - what influence.

b. cultural diversity in the coastal zone - addressing/accessing issues - both access to resources and to the policy process.

c. has had to recognize influence of fact that new generation - post boomers are moving into position of leadership.

23. a. Using a synthesis of available sea-level data, it has created potential sea level rise scenarios for important selected coastal areas and helped to formulate responsive policies.

b. With a team of coastal zone "physicists" and ecologists working together, new concepts of ecosystem engineering have been developed that:

- decrease beach erosion problems

- aid the natural flushing of estuaries

- allow cost-effective, environmentally sensitive coastal aquaculture projects to flourish

c. Provided a synthesis of information on waves and tides for selected number of major threatened estuarine systems.

24. The Center helps with community growth, including facilities, is sited away from hazard zones, and ecologically productive and environmentally sensitive areas.

How: By providing information on:

- techniques on reuse of existing developed land (economic feasibility, hazardous materials...)

- techniques on hazard area identification and siting practices

- techniques on classification/identification and protection of sensitive areas.

25. a. Using tools and processes assembled and promoted by CMS, over 80% of the nations coasts are managed through locally developed, federally accepted plans/programs that cover shoreline uses, point and non-point sources of water and sediment contamination habitat protection/restoration and state level fish/shellfish harvest management.

b. Following new management systems developed through a process organized by CMS, most federally regulated fish/shellfish harvests are rebuilding and providing high quality product to the market at fair costs on a sustainable basis.

26. a. Provided users (local government, states, industry) with tools (scientific, legal, institutional) for protection of coastal habitat.

b. Provided "process" (permitting, zoning, institutional arrangements) assistance and facilitate technical assistance for the development of sustainable (low environmental impact) capture fisheries and aquaculture (industry, states, local gov't) in coastal areas.

c. Developed and implemented outreach programs based on "good" information that showed linkages between human activities and habitat degradation/NPS, with goal of demonstrating how to obtain coastal ecosystem health and economic viability.

Appendix D: List of Participants

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Appendix E: Individual Group Reports

Group A's Report:

A. Recommended Services by CMS

Top priority (in order)

1. Develop state of the coasts
   a) A center led decentralized process with states
   b)video
   c) set standard methodologies for data gathering
   d)future scenarios each five years (think tank)

2. Use internet
   a) respond to state requests
   b) bulletin boards, e.g. Gulfline
   c) professional networks
   d) for broad categories
   e) access and training for local level users

3. Develop CZIC
   a) annotated reports in library

4. Ensure access and provide services/ info products for sate/local decision makers
   a) case studies and demonstration products
   b) directories
   c) interpretation of scientific data for decision-making on a regional basis
   d)training workshops for practitioners, professionals and state/local offices (will travel)

5. Provide evaluation of management programs, develop techniques, demos, case studies

6. Make data specific to CZ and coastal watersheds e.g.,
   a) census data
   b) EPA (TRI, STORET, etc.)

7. Provide library research function

8. Build directory of linkages between agency databases

Additional suggestions

1. Translate nexus/lexus/westlaw into user friendly by management objective annual update, put on internet

   a) also data from national league of state legislatures

2. Publish annotated directory of networks such as UR CoastNet and Coast GIS (relates to 2c above)

3. Establish coastal film video, CD ROM, directory

4. Provide coastal digital ortho photo of states

   a) finer scale on a case by case basis

5. Develop ecological economics of coastal management and CMS

7. Identify sources for curriculum and activities, conduct teacher workshops. Use Sea Grant, NERRS, NMS, and establish linkages with continuing education programs

B. Organizational and Operational

1. In house CMS divisions/niches

   Already planned:
   a) training/TOE
   b) habitat/ecologist/natural systems
   c) coastal management generalist

   Recommended additional:
   a) public information officer
   b) ecological economist
   c) legal/policy
   d) QA (ini program support)

2. Use graduate and undergraduate students for support and outreach

3. Establish strong relations with NCRI and small business innovation

· 4. Organization should garner grass root support by demo project, local and individual access

5. See figures 1 and 2

6. Establish QA/QC procedures
   a) project peer review of proposals (use NCRI/Sea Grant model)
   b) product peer review procedures (use NCRI/Sea Grant model)
   c) internal QA
   d) small project to design QA/QC

Recommended Attachments: 1. Curriculum from Jim Conner, 2. List of Data sources - Sorenson p. 5- 1

Group B's Report

Group B began its deliberations by focusing on its charge to develop realistic but innovative recommendations for NOAA management for implementing the CCEH concept. The recommendations have been developed with the goal of modifying human behavior in such a way as to ensure the long-term health and sustainability of the coastal community.

Major Recommendations:

The group identified three major recommendations. The recommendations all reflect some concern on the part of the group that the CCEH fully integrate user-generated concerns and priorities in setting its agenda, allocating resources. Therefore:

1. The CCEH, in order to succeed, must truly be user-driven. This means that the process must be user-friendly; CCEH should strive to give the user/customer what he/she wants and needs, not just what they specifically ask for. This should be an interactive, iterative process so that both the user and CCEH are convinced that the question has been answered, the issue has been resolved, and that the process worked to the satisfaction of both parties.

2. The CMS component must function as the "gatekeeper" to the other CCEH components. Users typically prefer to deal with a single entity and, ideally, the same entity each interaction. CMS should function as the point of contact for "one-stop-shopping" as a user convenience. CMS should function as the agenda-setting component of CCEH to ensure that Center activities directly support coastal/ocean/Great Lakes management needs.

3. The CCEH must be organized as a national network to ensure adequate user involvement. A decentralized approach will ensure that user needs and issues are adequately addressed in a timely fashion.

Discussion focused on the following areas:

External communities and users

Kinds of services

Capabilities that CCEH should uniquely provide

Organizational concepts and principles

Operational considerations

EXTERNAL COMMUNITIES AND USERS:

"Protected Area" managers, municipal planners, coastal ecosystem health researchers, local governments, state natural resource policy makers, state/federal/private educators, state CZM networks, hazardous materials spill response community, private sector developers (commercial, forestry/agricultural, ports, tourism, etc.), government permit analysts (regulatory community), NGOs (advocates), legislators, students (K-adult), environmental enforcement community, international CZM, consulting community, fisheries (habitat) managers.

KINDS OF SERVICES:

Generic categories of services were:

> Referral - verbal, directories
>
> Clearinghouse - passthrough internally generated information and data products
>
> Training - field-based, interdisciplinary
>
> Workshops and Conferences - facilitation; cross-disciplinary; topic-driven
>
> Outreach - feed back mechanism; linkage to real people; technology transfer and technical assistance
>
> On-site Incubator - project teams, issue resolution teams, all including CCEH   staff. Topic- and products- oriented.

UNIQUE CAPABILITIES AND SERVICES (and lead CCEH unit):

1. Topic-specific, interdisciplinary workshops: user-driven, workgroups; information product that documents problem resolution, ie., results-oriented process. (SA)

2. E-mail access/online services: easy access, use for product development and application. (TOE)

3. Clearinghouse of internally produced (legal, political, economic, technical, management, etc) information products. (TOE, SA)

4. Visioning and futuring towards a scenario of sustainable coastal community health; ongoing process, updated continually. (SA)

5. Integrated approach to enhance capabilities to monitor status and project trends and predict impacts. (SA)

6. Public relations/media interactions: outreach function to provide national perspective on status of CCEH. (TOE)

7. Training Center: for professionals, field-oriented, take advantage of existing resources. Examples: hazmat response, NRDA, estuarine processes, resource mapping. (TOE)

8. Expand ESI layering of GIS mapping to include CZM, human uses, user needs, towards validation by users to ensure that GIS is user-friendly. (SA)

9. Provide a mechanism for promoting user-driven federally funded research and monitoring i.e., integrate users into design of federally funded research and monitoring projects. (SA, TOE)

10. Professional development opportunities: for students (graduate and undergraduate credit), professionals, on- and off-site. (TOE)

11. Secures, disaggregates, and "translates" (for management applications) geographic and natural resources data in response to user requests. (SA)

ORGANIZATIONAL CONCEPTS AND PRINCIPLES:

The group felt that it was important to elaborate organizing concepts and principles for the

CCEH; from these concepts and principles, the organizational structure would follow. Important

in shaping the organizational structure were three principles:

1. Rotational approach for assigning staff, to ensure continuing flux of ideas, data and information between CCEH and the regions;

2. Avoiding organizational structures that produce unintended undesirable consequences, e.g., structures that foster a regional versus headquarters, or "us versus them" attitude;

3. Use existing capabilities and services (e.g., Sea Grant, CZM networks, NERRS, National Marine Sanctuaries, other federal and state agencies, NGOs, etc.) to the fullest possible extent to build nodes for accessing and exchanging information and data.

These principles led the group to suggest the following organizational arrangement:

A. Core/permanent staff - central, long-term.

B. Rotational professional staff - central, two-year terms.

C. Short-term visiting scholars/students/ professionals.

D. CCEH Regional Representatives: with hardware and software needed to support an information and data node.

E. CCEH Partners: non-CCEH funded but with formally recognized linkages, e.g., CZM, Sea Grant, NERRS , NMSs.

F. Contracted consultants/expertise/scientists.

G. "Advisory" committees

     - Technical (QC/QA, peer-review)

     - Regional User groups/committees

     - Management (CZM, planners, etc).

National Review Committee: a "board of directors" comprised of representatives from the above groups. Their role is evaluation and strategic planning.

The group recommends that the distribution of CCEH personnel be given some additional thought. It seems clear that some staff resources must to be assigned to field locations. Categories A, B, and C are headquarters staff positions; categories D, E, and F are externally located positions. The leaders of the regional user groups should serve as members of the National Review Committee to provide a real-time, regionally based perspective on CCEH activities, directions, plans, and goals.

OPERATIONAL CONSIDERATIONS:

Location of staff: distributed, some at CCEH, some offsite.

Logistics: housing, transportation, access/security on base, personal services (banking, etc.).

Communications:

On-line capability, with feedback loop to product development and enhancement.

Hardware, software, is included; as is a 1-800 number for real-time access.

Computer specialist/systems operator/administrator

Graphics and publication capability: onsite and/or offsite, duplication/photocopying
services.

Videoconferencing facilities

Audiovisual facilities and capabilities.

Quality Control

Technical Advisory Committee

Peer-review of all CCEH products

Competitive allocation of funds (minimize sole-source awards)

Ongoing visioning and internal self-evaluation, including staff review of CCEH